

## CLAIMS

1. A function execution method comprising steps of: stacking, in a stack area of a memory, a function record area according to a format of an invoked function which is invoked by executing an invoking function including a process to invoke another function; invoking the invoked function utilizing the stacked function record area; executing the invoked function which has been invoked; and then discarding the stacked function record area,

characterized in that

an execution format of a first invoking function, which is obtained by compiling source-codes, to be executed in the function record area is analyzed and

a second invoking function, which is different from the first invoking function and includes a process of utilizing the function record area to execute the invoking function as an area to invoke the invoked function, is executed as an alternative function to the first invoking function when it is judged from the analysis that execution results of an invoked function to be invoked by the first invoking function become execution results of the invoking function.

2. A function execution apparatus, which stacks, in a stack area of a memory, a function record area according to a format of an invoked function which is invoked by executing an invoking function including a process to invoke another function, invokes the invoked function utilizing the stacked function record area, executes the invoked function which has been invoked and then discards the stacked function record area, comprising:

means for analyzing an execution format of a first invoking function, which is obtained by compiling source-codes, to be executed in the function record area; and

means for executing a second invoking function, which is different from the first invoking function and includes a process of utilizing the function record area to execute the invoking function as an area to invoke the invoked function, as an alternative function to the first invoking function when it is judged from the analysis that execution results of an invoked function to be invoked by the first invoking function become execution results of the invoking function.

3. A function execution apparatus, which stacks, in a stack area of a memory, a function record area according to a format of an invoked function which is invoked by executing an invoking function including a process to invoke another function, invokes the invoked function utilizing the stacked function record area, executes the invoked function which has been invoked and then discards the stacked function record area, comprising a controller capable of performing operations of:

analyzing an execution format of a first invoking function, which is obtained by compiling source-codes, to be executed in the function record area; and

executing a second invoking function, which is different from the first invoking function and includes a process of utilizing the function record area to execute the invoking function as an area to invoke the invoked function, as an alternative function to the first invoking function when it is judged from the

the computer program comprising:

a procedure for causing the computer to execute a second invoking function, which is different from the first invoking function and includes a process of utilizing the function record area to execute the invoking function as an area to invoke the invoked function, as an alternative function to the first invoking function when it is judged from the analysis that execution results of an invoked function to be invoked by the first invoking function become execution results of the invoking function.